



Time Remaining: 44/45 (Minutes)

Q.1

Test 4 Circular Motion

Physics Unit Wise

A stone tied with a string, is rotated in a vertical circle. The minimum speed with which the string has to be rotated

- A) Is independent of the mass of the stone
- B) Is independent of the length of the string
- C) Decreases with increasing mass of the stone
- D) Decreases with increasing in length of the string

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Correct Answer:

☐ A ☐ B ☐ C ☐ D

Next



Q.2

Test 4 Circular Motion

Physics Unit Wise

If the body is moving in a circle of radius r with a constant speed v , its angular velocity is

A) v^2/r

B) vr

C) v/r

D) r/v

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Correct Answer:



A



B



C



D

Next

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Q.3

Test 4 Circular Motion

Physics Unit Wise

A motor cyclist going round in a circular track at constant speed has

- A) Constant linear velocity
- B) Constant acceleration
- C) Constant angular velocity
- D) Constant force

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.4

Test 4 Circular Motion

Physics Unit Wise

The ratio of angular speeds of minute hand and hour hand of a watch is

A) 1 : 12

B) 6 : 1

C) 12 : 1

D) 1 : 6

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.5

Test 4 Circular Motion

Physics Unit Wise

A body is moving along a circular path with variable speed. It has

- A) a radial acceleration
- B) zero acceleration
- C) a tangential acceleration
- D) both tangential and radial accelerations

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.6

Test 4 Circular Motion

Physics Unit Wise

A particle is acted upon by a force of constant magnitude which is always perpendicular to the velocity of the particle. The motion takes place in a plane. It follows that

- A) its velocity is constant
- B) its motion is linear
- C) its acceleration is constant
- D) its motion is circular

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.7

Test 4 Circular Motion

Physics Unit Wise

A particle moving in a circle of radius 25 cm at 2 revolutions per second. The acceleration of the particle is S.I. unit is

A) $4\pi^2$

B) $2\pi^2$

C) $3\pi^2$

D) π^2

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Correct Answer:



A



B



C



D

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Q:8

Test 4 Circular Motion

Physics Unit Wise

A particle is moving along a circular path. Let v , ω , α and a_c be its linear velocity, angular velocity, angular acceleration and centripetal acceleration respectively. Which is the wrong statement from the followings?

A) $\omega \perp v$

B) $\omega \perp \alpha$

C) $\omega \perp a_c$

D) $v \perp a_c$

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.9

Test 4 Circular Motion

Physics Unit Wise

A wheel rotates with a constant angular velocity of 600 r.p.m. What is the angle through which the wheel rotates in one second?

- A) 5π radian
C) 20π radian

- B) 15π radian
D) 10π radian

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.10

Test 4 Circular Motion

Physics Unit Wise

Angular velocity of an hour hand of a watch

A) $\frac{\pi}{43200} \text{ rad/s}$

B) $\frac{\pi}{30} \text{ rad/s}$

C) $\frac{\pi}{21600} \text{ rad/s}$

D) $\frac{\pi}{1800} \text{ rad/s}$

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Correct Answer:



A



B



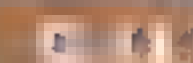
C



D

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Centripetal force in vector form can be expressed as

A) $F = \frac{mv^2}{r}$

B) $F = -m\omega^2 r$

C) $F = \frac{mv^2}{r} r$

D) $F = \frac{mv^2}{r} r$

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Question Navigator

Q1 Q2 Q3 Q4 Q5

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Test 4 Circular Motion

Physics Unit Wise

If a particle moves with uniform speed that its tangential acceleration will be

- A) zero B) infinite
C) constant D) none of these

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Test 4 Circular Motion

Physics Unit Wise

If a body of mass m is rotating in a circle of radius r with frequency of rotation " f " then centripetal force acting on it is

A) $2\pi mrf$

B) $4\pi^2 2mrf^2$

C) $4\pi^2 mrf$

D) $\pi^2 mrf^2$

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Question 1/10



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Test 4 Circular Motion

Physics Unit Wise

A body is rotating in circle of radius r . Keeping period of rotation constant but radius is doubled ($2r$) then centripetal force become

- A) Half
- C) Same

- B) Double
- D) Four times

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Time Remaining: 43:45 (Minutes)**Test 4 Circular Motion****Physics Unit Wise**

The relation between the linear velocity and angular velocity is.

A) $\omega = r \times v$

B) $v = \omega \times r$

C) $v = r \times \omega$

D) $\omega = v \times r$

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Test 4 Circular Motion

Physics Unit Wise

The angle subtended by an arc equal to radius is

- A) 1 rad B) 1 Revolution
C) One degree D) All

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Q111 Answer

A B C D

Next

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Test 4 Circular Motion

Physics Unit Wise

If we whirl a stone at the end of a string in the vertical circle, it is likely to break when the stone is

- A) At the highest point
- B) At any point during motion
- C) At the lowest point
- D) At the point where gravity is not acting

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Test 4 Circular Motion

Physics Unit Wise

When a body is whirled in a horizontal circle by means of a string the centripetal force is supplied by

- A) Mass of a body
- B) Tension in the string
- C) Velocity of body
- D) Centripetal acceleration

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Correct Answer

A B C D

Next

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Test 4 Circular Motion

Physics Unit Wise

The angular velocity of a particle rotating in a circular orbit 100 times per minute is

A) 1.66 rad/s

B) 10.47 rad/s

C) 10.47 deg/s

D) 60 deg/s

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Question 1

1 2 3 4 5

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0241

Test 4 Circular Motion

Physics Unit Wise

An object is moving in a circle of radius 100 m with a constant speed of 31.4 m/s. What is its average speed for one complete revolution?

A) Zero

B) 31.4 m/s

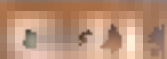
C) 3.14 m/s

D) $\sqrt{2} \times 31.4 \text{ m/s}$

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Test 4 Circular Motion

Physics Unit Wise

A motor cyclist going around in a circular track at constant speed

- A) Constant linear velocity
- B) Constant acceleration
- C) Constant angular velocity
- D) Constant force

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Question 1/5

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Test 4

Test 4 Circular Motion

Physics Unit Wise

A 0.5 kg ball moves in a circle of radius 0.4 m with a velocity of 4 ms^{-1} . The centripetal force on the ball is

A) 10 N

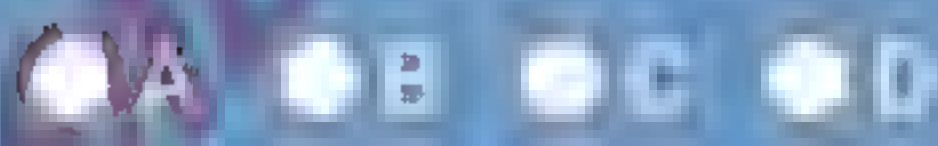
B) 20 N

C) 40 N

D) 80 N

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Question Navigator



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Test 4

Test 4 Circular Motion

Physics Unit Wise

The acceleration of a car is 8ms^{-2} of diameter of wheel is 2m its angular acceleration will be

A) 16 rad s^{-2} B) 8 rad s^{-2} C) 4 rad s^{-2} D) 10 rad s^{-2}

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Question 1

A B C D

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1/4

Test 4 Circular Motion

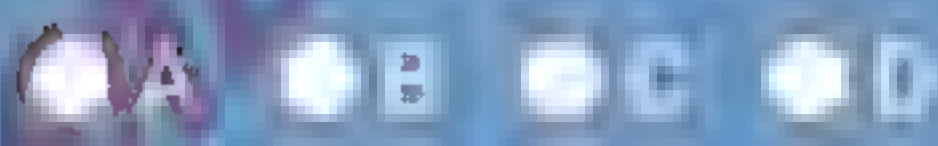
Physics Unit Wise

If a car moves with uniform speed of 2 m/s in a circle of radius 0.4 m . It's angular speed is

A) 4 rad/s B) 6 rad/s C) 5 rad/s D) 7 rad/s

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Question Navigator



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Test 4

Test 4 Circular Motion

Physics Unit Wise

A fly wheel rotates at a constant speed of 3000rpm. The angle described by the shaft in radian In one second is:

A) 3000π B) 100π C) 50π D) 2π

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Correct Answer

A B C D

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Test 4 Circular Motion

Physics Unit Wise

The angular speed of hour's hand of mechanical watch is radh^{-1}

A) $\frac{\pi}{2}$

B) $\frac{\pi}{3}$

C) $\frac{\pi}{6}$

D) $\frac{\pi}{12}$

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Correct Answer

A B C D

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Test 4 Circular Motion

Physics Unit Wise

If the tangential and centripetal accelerations are tangents and along the centre, respectively, then the resultant acceleration (a) will be

A) $a = a_t + a_c$

B) $a = a_t - a_c$

C) $a = \sqrt{a_t^2 + a_c^2}$

D) $a = a_c \perp a_t$

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Question Answer

A B C D

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Test 4 Circular Motion

Physics Unit Wise

A string can withstand a tension of 25N. What is the greatest speed at which a body of mass 1 kg can be whirled in a horizontal circle using 1 m length of the string?

A) 10ms^{-1} B) 5ms^{-1} C) 7.5ms^{-1} D) 2.5ms^{-1}

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Question 1 of 10

A B C D

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Q.29

Test 4 Circular Motion

Physics Unit Wise

A stone is whirled in a vertical plane. The stone has

- A) radial acceleration only
- B) both radial and tangential accelerations
- C) tangential acceleration only
- D) neither radial nor tangential acceleration

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Q.30

Test 4 Circular Motion

Physics Unit Wise

If a body of mass m is rotating in a circle of radius r with frequency of rotation " f " then centripetal force acting on it is

A) $2\pi mrf$

B) $4\pi^2 mrf^2$

C) $4\pi^2 2mrf$

D) $\pi^2 mrf^2$

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

Submit Quiz

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 No internet connection**Attempt Details**

Date: 09/22/2021 11:17:08

This is a Unitwise Test | Images will be shown in class during discussion.

Total Marks: 0/30

Skipped Questions Details

1 ✕ Correct Answer: A

2 ✕ Correct Answer: A

3 ✕ Correct Answer: C

4 ✕ Correct Answer: C

5 ✕ Correct Answer: D

6 ✕ Correct Answer: D

7 ✕ Correct Answer: A

8 ✕ Correct Answer: A

9 ✕ Correct Answer: C

10 ✕ Correct Answer: C

11 ✕ Correct Answer: C

12 ✕ Correct Answer: A

13 ✕ Correct Answer: B

14 ✕ Correct Answer: A

15 ✕ Correct Answer: B

16 ✕ Correct Answer: A

17 ✕ Correct Answer: C

18 ✕ Correct Answer: B

No internet connection

8 ✕ Correct Answer: A

9 ✕ Correct Answer: C

10 ✕ Correct Answer: C

11 ✕ Correct Answer: C

12 ✕ Correct Answer: A

13 ✕ Correct Answer: B

14 ✕ Correct Answer: A

15 ✕ Correct Answer: B

16 ✕ Correct Answer: A

17 ✕ Correct Answer: C

18 ✕ Correct Answer: B

19 ✕ Correct Answer: B

20 ✕ Correct Answer: B

21 ✕ Correct Answer: C

22 ✕ Correct Answer: B

23 ✕ Correct Answer: B

24 ✕ Correct Answer: C

25 ✕ Correct Answer: B

26 ✕ Correct Answer: C

27 ✕ Correct Answer: C

28 ✕ Correct Answer: B

29 ✕ Correct Answer: B

30 ✕ Correct Answer: B